

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	1 OF 40	2006. 05. .

Card Issuing Machine for IC Card

KYTronics Corp.,Ltd

3rd Floor, A-Dong,

Twins Town-Bldg, 703-2.

Gojan-Dong, AnSan-City,

Kyung Ki-Do, Korea

Tel : 82 - 31 - 485 - 9480

Fax : 82 - 31 - 485 - 9488

E-mail : sales@kytronics.co.kr

http://www. kytronics.co.kr

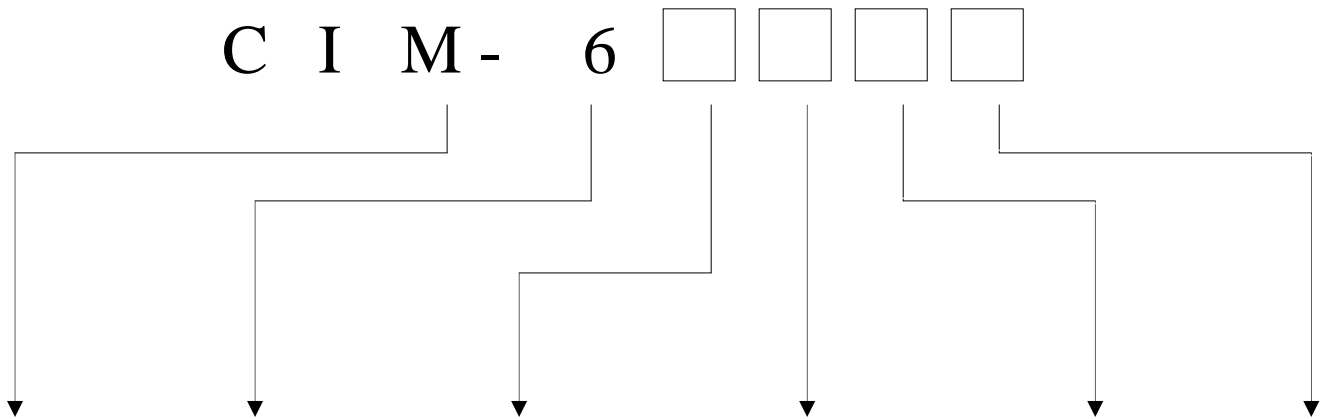
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	2 OF 40	2006. 05. .

REVISION HISTORY

No	DATE	DESCRIPTION	REV	PAGE	F/W Name
1	2006.05. .	Preliminary Version	X1	40	

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	3 OF 40	2006. 05. .

MODEL NAME INFORMATION



Interface	Function	MS / IC / RF	Track	Option	Thickness
RS-232	6 : Card Issuing Machine	1 : MS Only 2 : MS & IC-Contact 3 : MS & RF 4 : MS & IC & RF 5 : IC-Contact Only 6 : RF Only 7 : IC-Contact & RF 9 : Customer	0 : Without Magnetic 1 : ISO 1 Track 2 : ISO 2 Track 3 : ISO 3 Track 4 : ISO 1,2 Track 5 : ISO 1,3 Track 6 : ISO 2,3 Track 7 : ISO 1,2,3 Track	0 : Without Bezel 1 : LOW-CO 2 : HI-CO 3 : LOW-CO & Shutter 4 : HI-CO & Shutter 5 : Shutter 6 : LOW-CO & Bezel 7 : HI-CO & Bezel 8 : Bezel	A : 0.2T B : 0.38T C : 0.5T D : 0.76T E : 0.84T F : 1.0T

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	4 OF 40	2006. 05. .

C O N T E N T S

Overview -----	5
System Block Diagram -----	6
Specification -----	8
IC Card Process -----	10
Communication Interface -----	11
Technical Drawing -----	17
Command Detail -----	19
Error Detail -----	35
Precautions -----	40

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	5 OF 40	2006. 05. .

OVERVIEW

CIM64XX Series is a set of card issuing machine for the magnetic, IC, and RF card in conjunction with the KYT2600 and KYT3000 series. This model can be used for magnetic card conforming to the ISO7816-2 standard and most of the IC cards conforming with the ISO7816-4 T=0,T=1. Additionally, this model also can be used for the RF card conforming to the MIFARE.

This model simplified the command for magnetic card, minimize the delay time occurs in the communication data processing, and improved the speed due to function to issue the all tracks at a time.

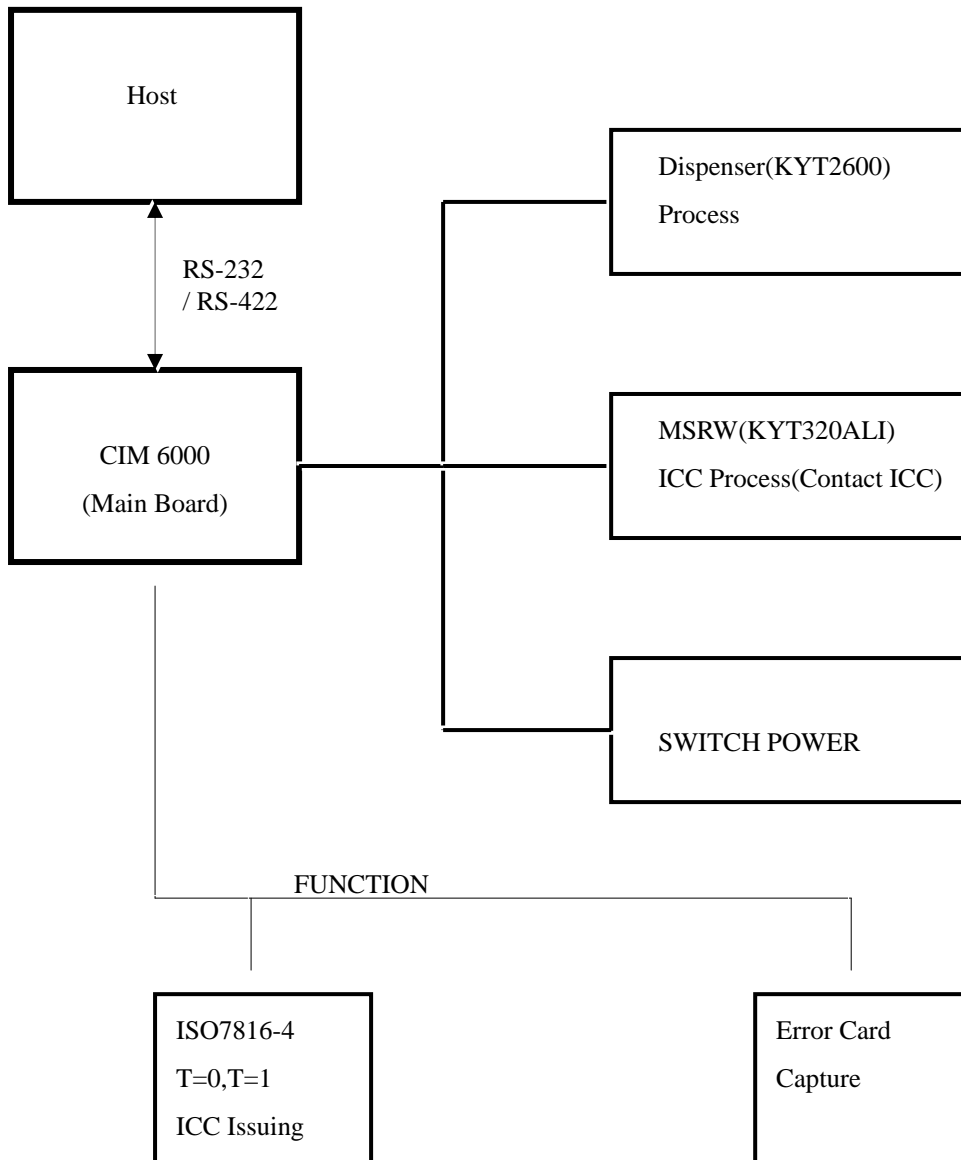
This model has the following advantages:

- 1) Remove the latency due to the user-based card exchange, by loading 600 PCS(0.76 mm card) at a time.
- 2) Use the different type of card using two stackers.

As an automatic issuing machine, this model can be used in issuing most types of credit card and debit card in financial area.

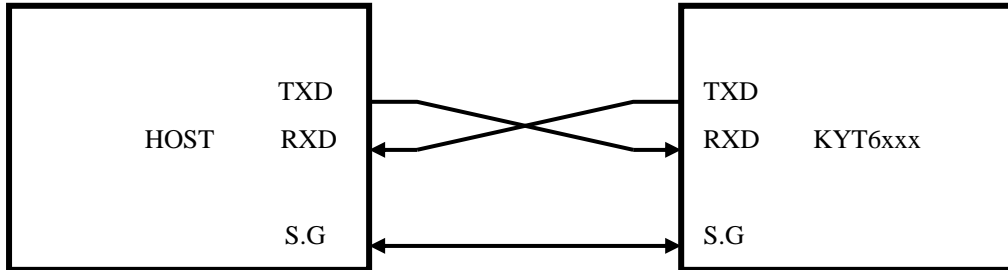
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	6 OF 40	2006. 05. .

SYSTEM BLOCK DIAGRAM



Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	7 OF 40	2006. 05. .

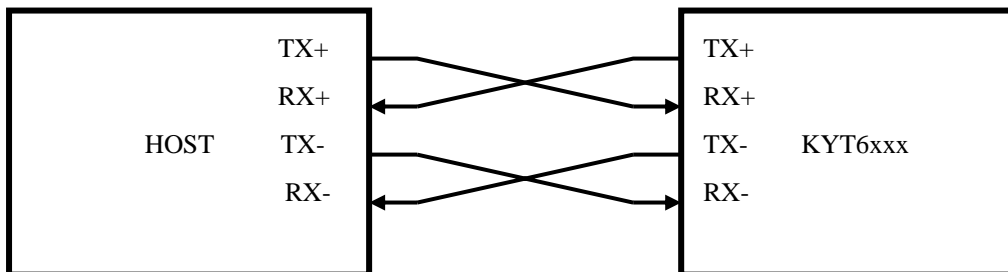
◆ *RS – 232 Connection*



CASE 1) Part Number : RED-9S-LNA(HIROSE)

Pin No	INDEX	Remark
2	RXD	Receive
3	TXD	Transmit
5	S.G	Signal Ground

◆ *RS422 Connection*



CASE 1) Part Number : RED-9S-LNA(HIROSE)

Pin No	INDEX	Remark
1	TX+-	
4	RX+	
6	TX-	
8	RX-	

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	8 OF 40	2006. 05. .

SPECIFICATIONS

◆ *basic functions*

	Spec	Remark
Dimension	247mm(W) x 399mm(L) x 388mm(H)	
Weight		
Input power	AC 220V	
Card Feeding Speed	510mm/Sec ±10%	

◆ *Environment Requirements*

Operating Locus : in door use Only

Ambient Temperature

Storage : -20 °C to 70 °C(No functional error to be found in 12 hours after returning to normal environment)

Operating : 5 °C to 50°C (In 0°C to +5°C range, all specifications but 'Warped card' to be satisfied)

Ambient Relative Humidity

Storage : 0% to 95% RH(No functional error to be found in 12 hours after returning to normal environment)

Operating : 5 % 90% RH(No Condensation)

Vibration

: Amplitude 2mm, 10 to 50 Hz in X, Y, Z directions for 30min, 2G or less

Shock Endurance

: 30G, 11ms

Encoding Speed : 2.3 ~ 5 Sec/Card

Life Time : More than 500,000card passes(1pass : one forward and backward)

Error Rate : Less than 3/1,000 cycle(Test Card : KYT Standard)

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	9 OF 40	2006. 05. .

◆ *Controller Environment*

Communication

: RS422 OR RS232C Interface

: Baud Rate – 9600 BPS

– 19200 BPS

– 38400BPS(Default)

– 57600BPS

: 8Data bit, 1 Start bit, None Parity bit, 1 Stop Bit

CPU : V25, 16MHz

RAM : 1Mbit

ROM : 512Kbit

Flash : 4Mbit(Expandable)

RTC

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	10 OF 40	2006. 05. .

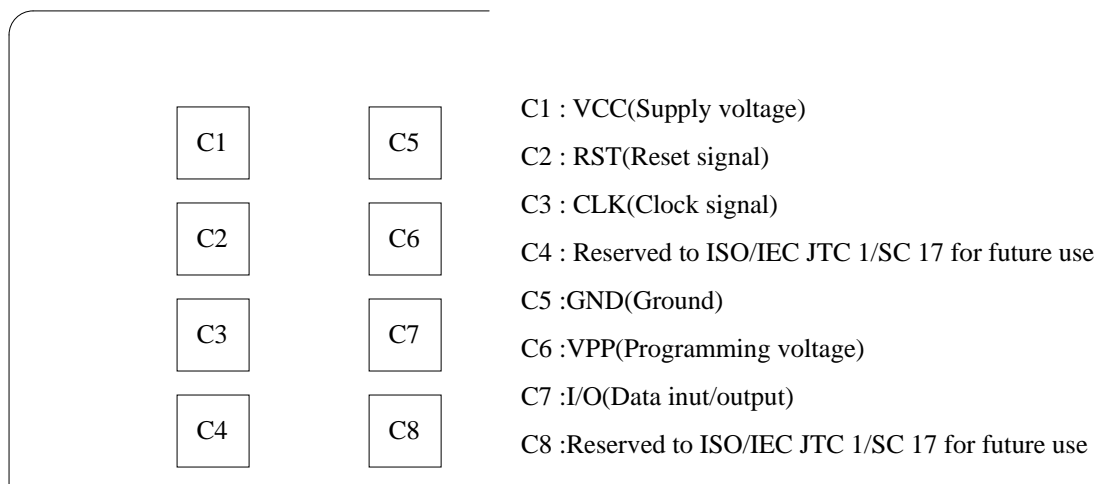
IC CARD PROCESS

This model provides most type of IC card compliant to ISO7816 T=0,T=1 .

◆ *Processing time* : Less than 1 Sec

◆ *Number and Location of the contacts on IC Card*

: Number and location of the contacts on IC Card is specified in ISO 7816-2 figure 2
Refer to Appendix A.



◆ *Power Consumption*

Motor Starting or Reversing : Less than 310mA(50mSec)
 Card Feed & Reading : Less than 690mA
 Card Feed & Writing : Less than 700mA
 Steady state : Less than 180mA

◆ *Life and Reliability*

IC Contact : Approximately 1,000,000 passes
 Error Rate : 3/1000 cycle

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	11 OF 40	2006. 05. .

COMMUNICATION INTERFACE

◆ *Communication Method*

Asynchronous, Half duplex.

Baud Rate : 9600 – 57600Bps , Default : 38400Bps

Start Bit : 1Bit

Data Length : 8Bit

Parity : None

Stop Bit : 1Bit

◆ *Communication Protocol Format*

1 *Command Frame Format.*

SOH	Null	Length	STX	CMD	DATA	ETX	BCC
-----	------	--------	-----	-----	------	-----	-----

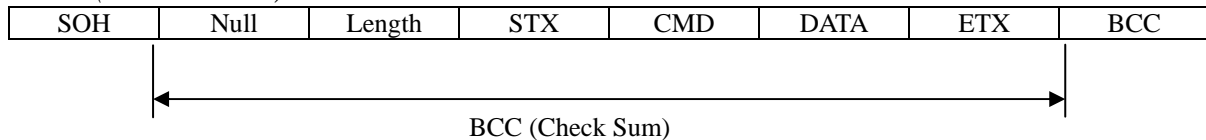
2 *Positive Response Frame Format*

SOH	Null	Length	STX	CMD	GOOD	0x01	DATA	ETX	BCC
-----	------	--------	-----	-----	------	------	------	-----	-----

3 *Negative Response Frame Format*

SOH	Null	Length	STX	CMD	E-Code	0x00	ETX	BCC
-----	------	--------	-----	-----	--------	------	-----	-----

4 *BCC (Check Sum)*



Command Frame BCC = Null ^ Length ^ STX ^ CMD ^ DATA ^ ETX.

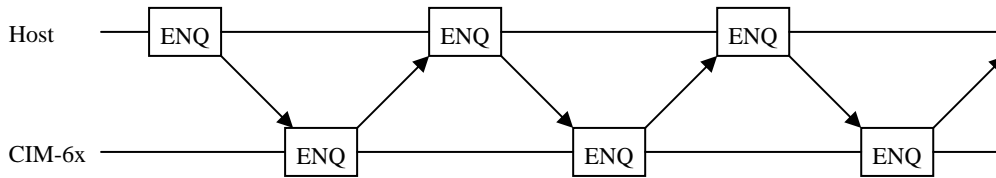
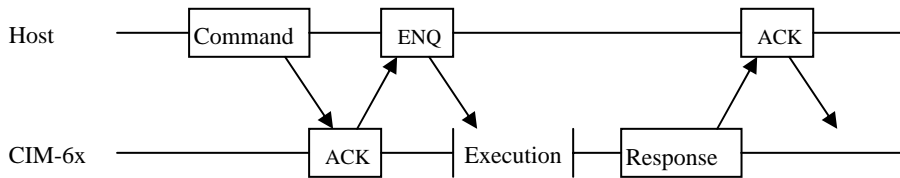
Positive Response BCC = Null ^ Length ^ STX ^ CMD ^ GOOD ^ 0x01 ^ DATA ^ ETX.

Negative Response BCC = Null ^ Length ^ STX ^ CMD ^ E-Code ^ ETX.

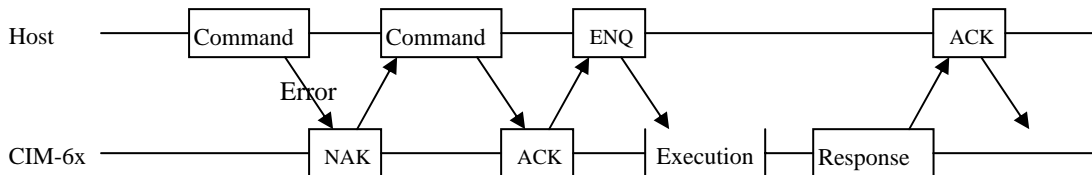
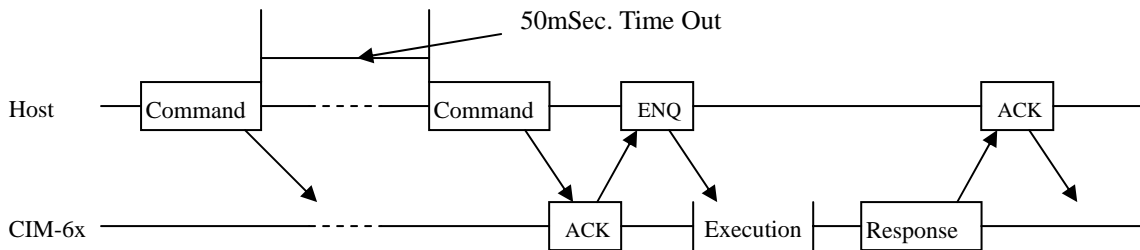
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	13 OF 40	2006. 05. .

7.3 Sequence

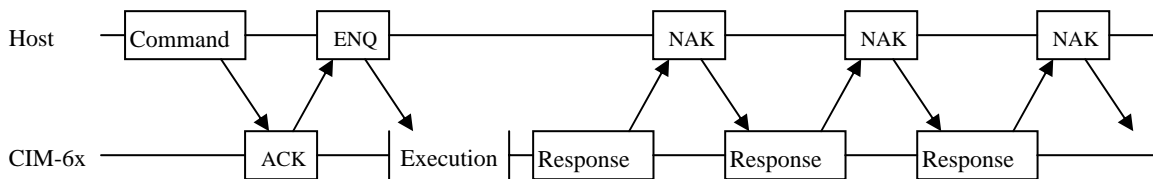
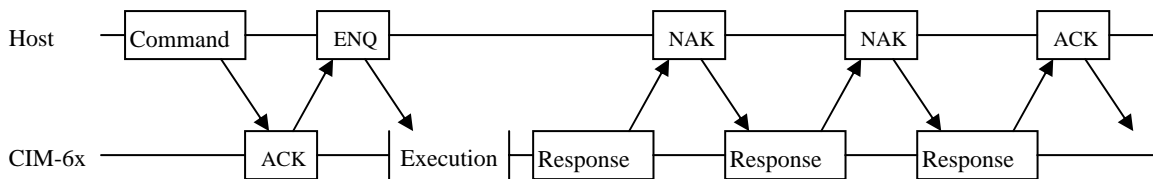
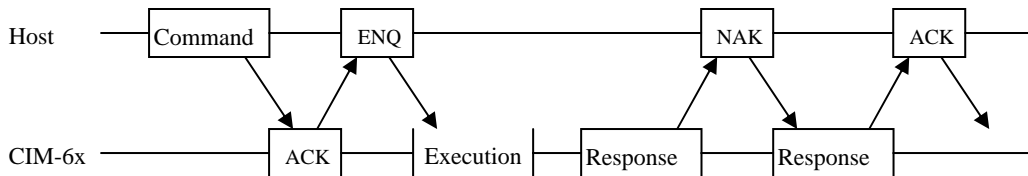
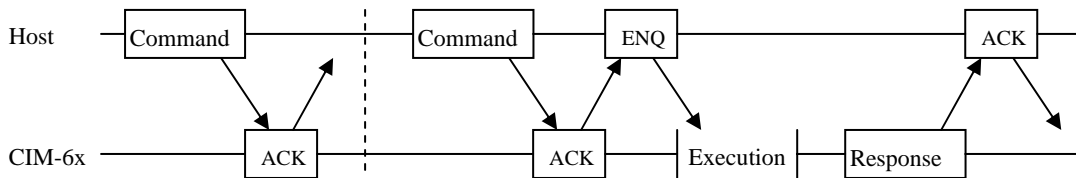
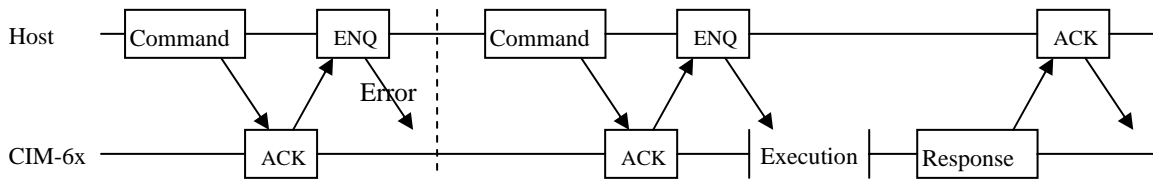
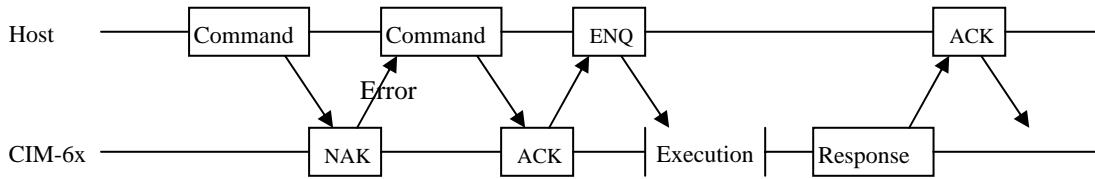
7.3.1 General



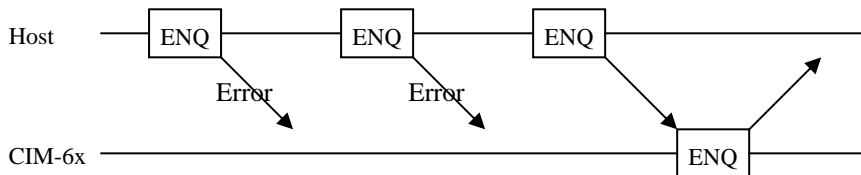
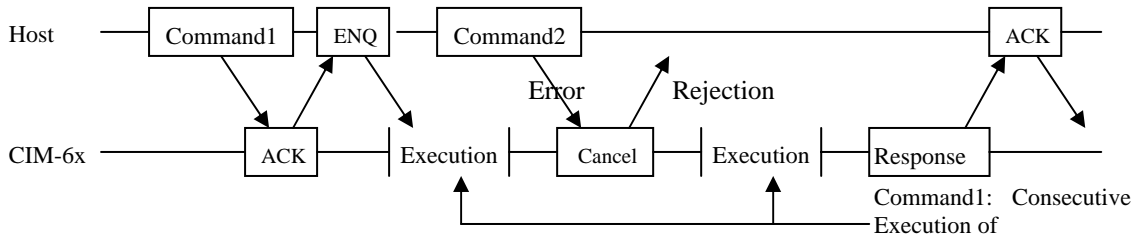
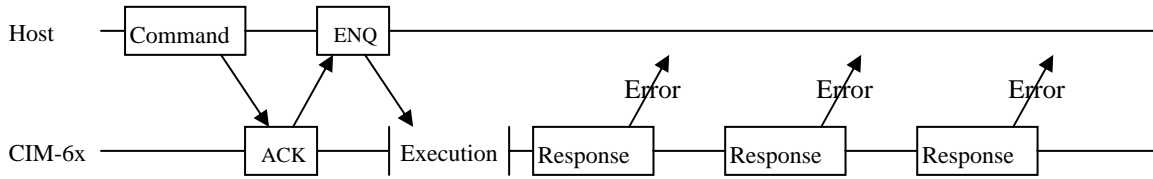
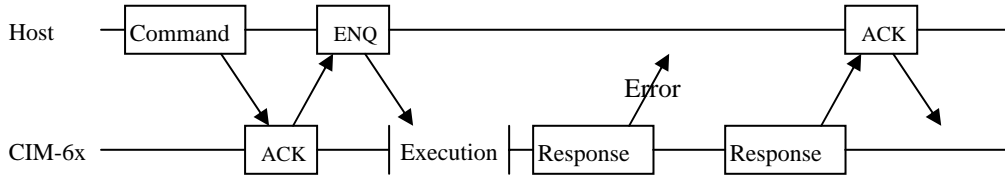
7.3.2 Error1



Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	14 OF 40	2006. 05. .



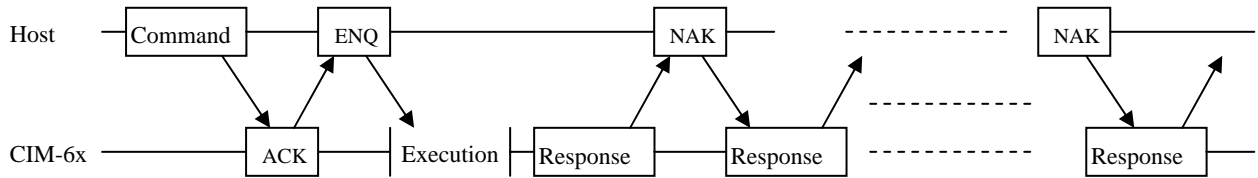
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	15 OF 40	2006. 05. .



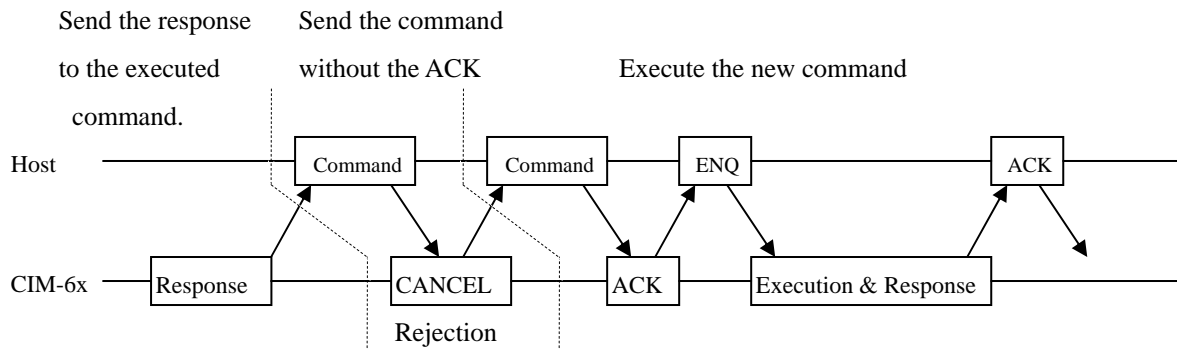
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	16 OF 40	2006. 05. .

7.3.3 Error2

- When received the NAK packet consecutively.



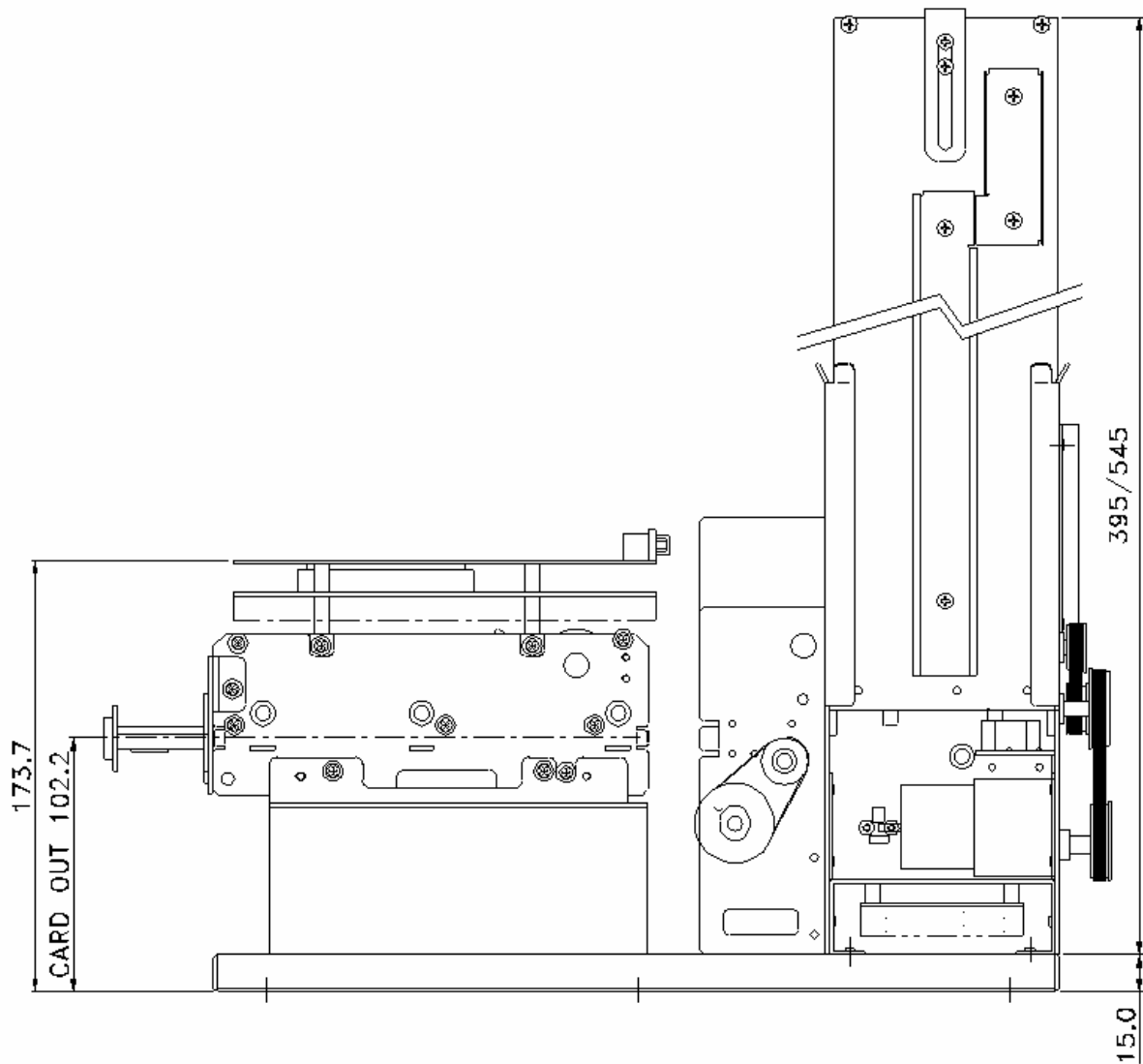
- When the Host sends the command without the ACK packet.



The terminal should ignore the command received before it sends the ACK packet, send the CANCEL packet. The second command will be treated as the ACK packet and executed with no ACK.

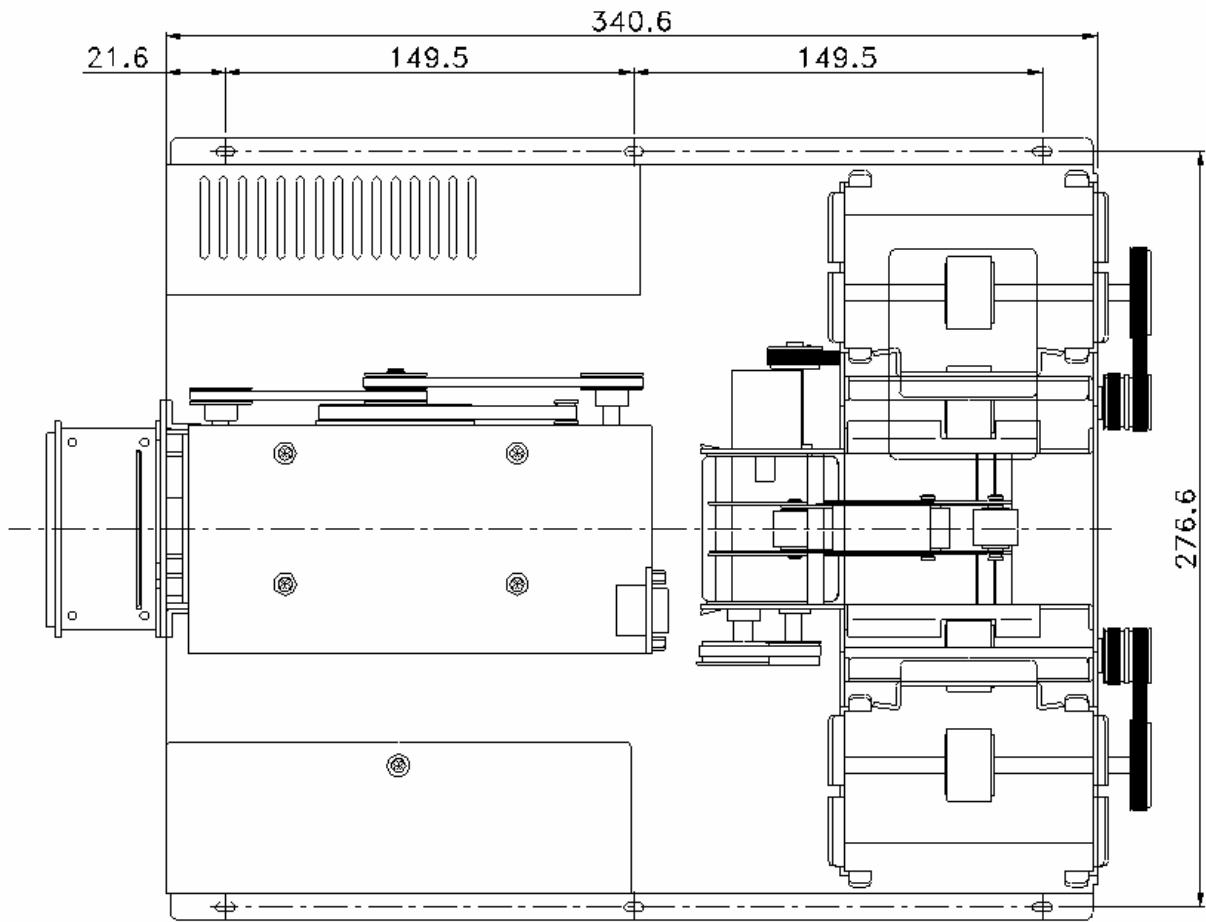
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	17 OF 40	2006. 05. .

TECHNICAL DRAWING



< SIDE VIEW >

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	18 OF 40	2006. 05. .



< TOP VIEW >

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	19 OF 40	2006. 05. .

COMMAND DETAIL

◆ *Command List*

	Item	Cm0	Cm1	Cm2	Detail	Note
COMMON	STATUS	'C'	'1'	'1'	Get Model	
		'C'	'1'	'2'	Get Firmware Version	
		'C'	'1'	'3'	Get Stacker	
		'C'	'1'	'4'	Get Status List	
		'C'	'1'	'6'	Get Card Position	
	SETTING_1	'C'	'2'	'1'	Set RTC IC	Check
		'C'	'2'	'3'	Set Capture Time	Check
		'C'	'2'	'4'	Set Retry Count	Check
		'C'	'2'	'5'	Set Buzz On/Off Cont.	Check
	MOVE	'C'	'3'	'1'	Card Move From Stacker	
		'C'	'3'	'2'	Card Move To ...	
		'C'	'3'	'4'	Card Capture	Backward
		'C'	'3'	'6'	Card Eject (Drop Mode)	Forward
		'C'	'3'	'7'	Card Eject (Hold Mode)	Forward
	SETTING_2	C	'4'	'2'	Software Reset	
		C	'4'	'3'	IC PTS Change	
IC CARD	IC CONTROL	'I'	'2'	'1'	IC Card Reset	
		'I'	'2'	'2'	IC Card Direct Control	

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	20 OF 40	2006. 05. .

◆ *Common*

These are the command set that all the CIM-6000 Series use. These commands include the terminal setting and the card movement related commands.

The 'STATUS' commands provide the function to check the current terminal status and the errors occurred during the command execution.

The 'SETTING' commands consist of commands for setting the terminal and these commands is easy to use because the same command can use for both setting and checking the terminal.

The 'MOVE' commands consist of commands used commonly like the card eject and capture command.

Commands Set:

Item	Cm0	Cm1	Cm2	Detail	Note
STATUS	'C'	'1'	'1'	Get Model	
	'C'	'1'	'2'	Get Firmware Version	
	'C'	'1'	'3'	Get Stacker	
	'C'	'1'	'4'	Get Status List	
	'C'	'1'	'6'	Get Card Position	
SETTING1	'C'	'2'	'1'	Set RTC IC	Check
	'C'	'2'	'3'	Set Capture Time	Check
	'C'	'2'	'4'	Set Retry Count	Check
	'C'	'2'	'5'	Set Buzz On/Off Cont.	Check
MOVE	'C'	'3'	'1'	Card Move In Stacker	
	'C'	'3'	'2'	Card Move To ...	
	'C'	'3'	'4'	Card Capture	Backward
	'C'	'3'	'6'	Card Eject (Drop Mode)	Forward
	'C'	'3'	'7'	Card Eject (Hold Mode)	Forward
SETTING2	'C'	'4'	'2'	S/W Reset	
	C	'4'	'3'	IC PTS Change	

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	21 OF 40	2006. 05. .

1 STATUS / SETTING

1.1 “C11” : It is to check out Model number of CIM-6000.

☞ Command Format

SOH	Null	Length	STX	“C11”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C11”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C11”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure

Model No
30 Byte (ASCII)

1.2 “C12” : It is to check out Firmware Version of CIM-6000

☞ Command Format

SOH	Null	Length	STX	“C12”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C12”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C12”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure

VERSION
30 Byte (ASCII)

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	22 OF 40	2006. 05. .

1.3 “C13” : It is check out status of Stacker of CIM-6000

☞ Command Format

SOH	Null	Length	STX	“C13”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C13”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C13”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure

Stacker 1	Stacker 2
1Byte (Hex)	1Byte (Hex)

☞ Data Variable

<Stacker1>

Code	Status
0x01	Stacker #1 Good
0x02	Stacker #1 Warning
0x03	Stacker #1 Empty

<Stacker2>

Code	Status
0x01	Stacker #2 Good
0x02	Stacker #2 Warning
0x03	Stacker #2 Empty

☞ Note

Stacker Status	Detail
‘Stacker Good’	Too many cards loading ¹⁾
‘Stacker Warning’	Too few cards loading ¹⁾
‘Stacker Empty’	No cards in stacker

1) The stacker status is detected by the sensor behind the stacker. The number of cards can be changed.

1.4 “C14” : It is to check out current Status of CIM-6000

☞ Command Format

SOH	Null	Length	STX	“C14”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	HL	Length	“C14”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	----	--------	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C14”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure

Error Code (1)	---	Error Code (N)
High Byte	Low Byte	
2Byte		

☞ Note

You can identify the stacker status, motor status, card status (jamming) and communication status through the Error Code in the response data structure.

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	23 OF 40	2006. 05. .

1.5 “C16” : It is to check out current card position of CIM-6000

☞ Command Format

SOH	Null	Length	STX	“C16”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C16”	GOOD	0x01	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	------	------	-----	-----

☞ Negative Response Format

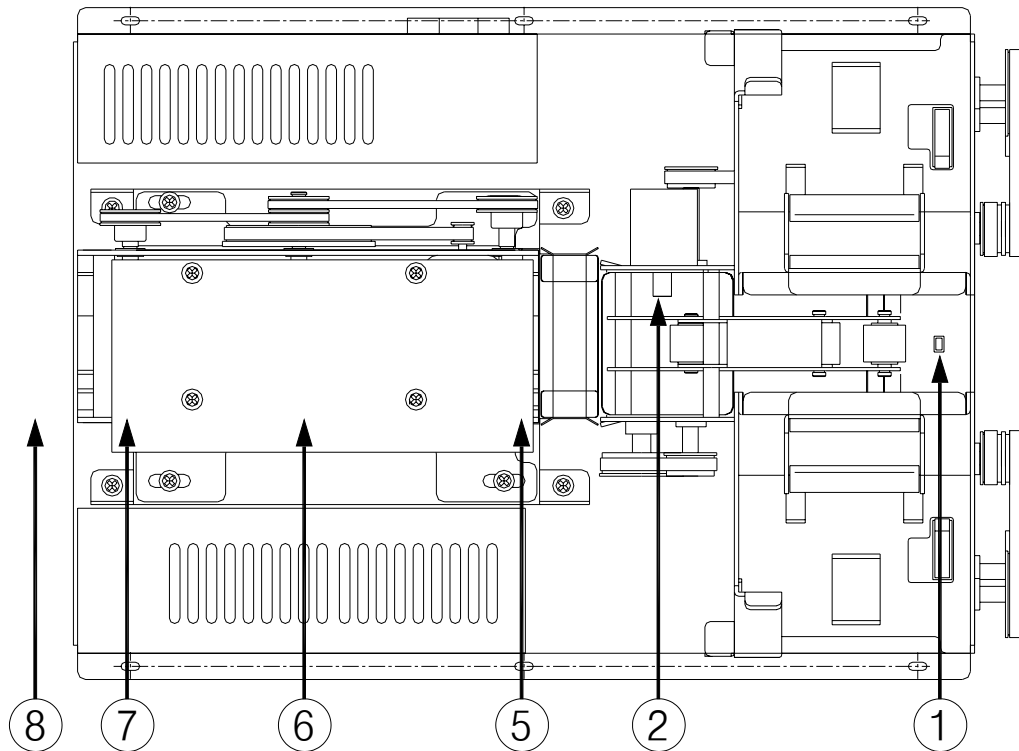
SOH	Null	Length	STX	“C16”	E-Code	0x00	ETX	Bcc
-----	------	--------	-----	-------	--------	------	-----	-----

☞ Response Data Structure

Card Position
1Byte (Hex)

<Card Position>

Number	Code	Sensor
1	0x01	SEN1
2	0x02	SEN2
3	0x04	SEN3
4	0x08	SEN4
5	0x10	SEN5
6	0x20	SEN6
7	0x40	SEN7
8	0x80	SEN8



Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	24 OF 40	2006. 05. .

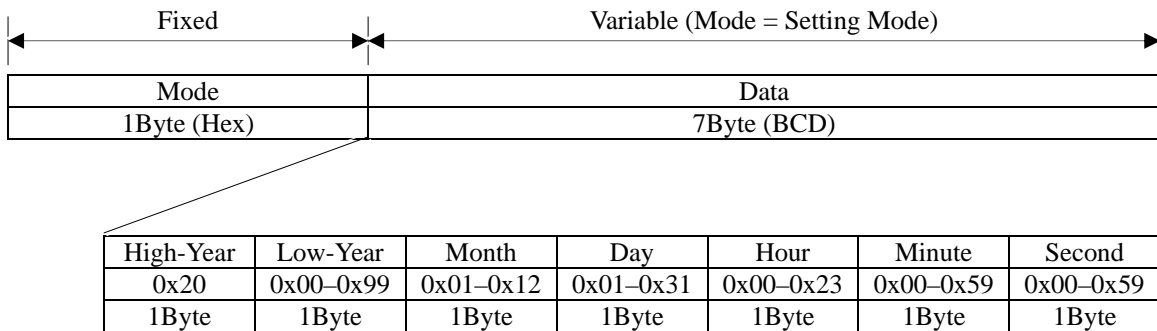
2 SETTING

2.1 “C21” : It is to set or to check ‘RTC IC’.

☞ Command Format

SOH	Null	Length	STX	“C21”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure



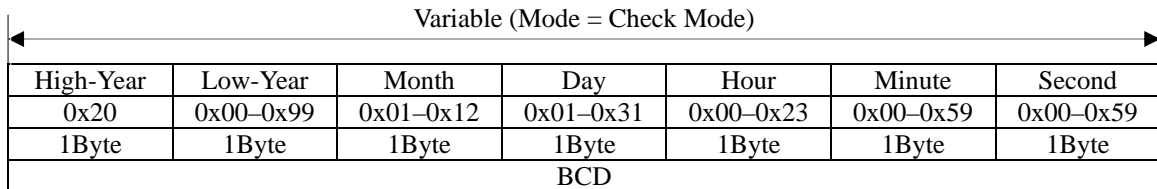
☞ Positive Response Format

SOH	Null	Length	STX	“C21”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C21”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure



☞ Data Variable

<Mode>

Code	Mode	Detail
0x01	‘Setting Mode’	Set ‘RTC IC’
0x02	‘Check Mode’	Check ‘RTC IC’

☞ Note

‘Day’ is changeable due to the value of ‘Month’.

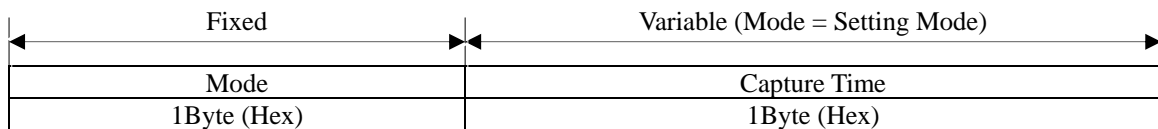
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	25 OF 40	2006. 05. .

2.2 “C23” : It is to set or to check ‘Capture Time’.

☞ Command Format

SOH	Null	Length	STX	“C23”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure



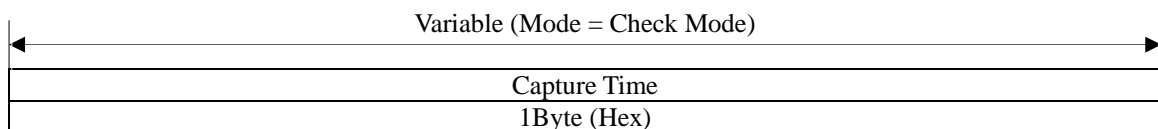
☞ Positive Response Format

SOH	Null	Length	STX	“C23”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C23”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure



☞ Data Variable

<Mode>

Code	Mode	Detail
0x01	‘Setting Mode’	Set ‘Capture Time’
0x02	‘Check Mode’	Check ‘Capture Time’

<Capture Time>

Code	Setting	Detail	Note
0x00	NON	‘Capture Time’ not set	Default
0x01	10Sec	‘Capture Time’ to be set 10 seconds	
0x02	20Sec	‘Capture Time’ to be set 20 seconds	
0x03	30Sec	‘Capture Time’ to be set 30 seconds	
0x04	40Sec	‘Capture Time’ to be set 40 seconds	
0x05	50Sec	‘Capture Time’ to be set 50 seconds	
0x06	60Sec	‘Capture Time’ to be set 60 seconds	

☞ Note

‘Capture Time’ Function

In Hold mode, if user doesn’t pull out the card from the terminal in ‘Capture Time’ period, it gets back the card automatically.

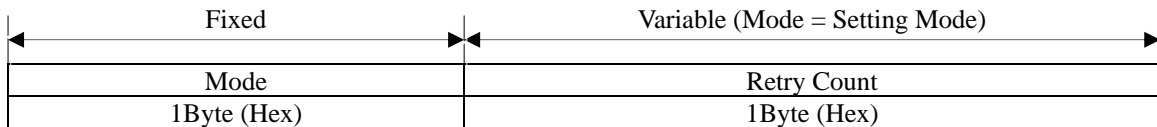
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	26 OF 40	2006. 05. .

2.3 “C24” : It is to set or to check ‘Retry Count’.

☞ Command Format

SOH	Null	Length	STX	“C24”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure



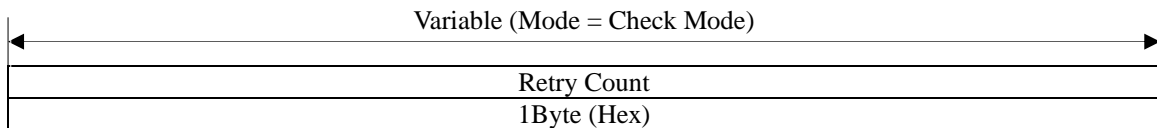
☞ Positive Response Format

SOH	Null	Length	STX	“C24”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C24”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure



☞ Data Variable

<Mode>

Code	Mode	Detail
0x01	‘Setting Mode’	Set ‘Retry Count’
0x02	‘Check Mode’	Check ‘Retry Count’

<Retry Count>

Code	Setting	Detail	Note
0x00	NON	Do not retry	
0x01	Once	Execute the instruction again.	
0x02	Twice	Retry it twice	
0x03	Three times	Retry it three times	Default

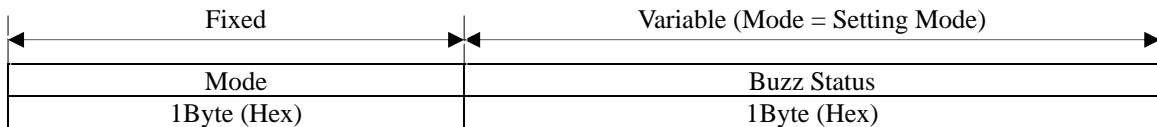
Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	27 OF 40	2006. 05. .

2.4 “C25” : It is to set or to check ‘Buzz Control’.

☞ Command Format

SOH	Null	Length	STX	“C25”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure



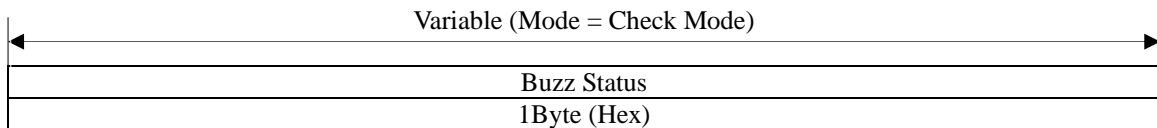
☞ Positive Response Format

SOH	Null	Length	STX	“C25”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C25”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Response Data Structure



☞ Data Variable

<Mode>

Code	Mode	Detail
0x01	‘Setting Mode’	Set ‘Buzz Control’
0x02	‘Check Mode’	Check ‘Buzz Control’

<Buzz Status>

Code	Setting	Detail	Note
0x01	Buzz Off	Buzz Off	
0x02	Buzz On	Buzz On	Default

☞ Note

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	28 OF 40	2006. 05. .

2.5 “C42” : Software RESET for Main Board

☞ Command Format

SOH	Null	Length	STX	“C42”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C42”	GOOD	0x01	ETX	Bcc
-----	------	--------	-----	-------	------	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C42”	E-Code	0x00	ETX	Bcc
-----	------	--------	-----	-------	--------	------	-----	-----

☞ Note

This “C42” Software RESET command is effective for CIM6000 MAIN BOARD only.

Card Dispenser and Card Reader is not RESETed.

With this software RESET, all the data setted at CIM-5000 return to DEFAULT value.

After “RESET”, minimum 5 seconds is required before running to get secure operation.

2.6 “C43” : Extension command

☞ Command Format

SOH	Null	Length	STX	“C43”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

2.6.1 Select the card Protocol or Speed & IC interface module baud rate

☞ Command Data Structure

1'st Byte	2'st Byte								REMARK
Code	B7	B6	B5	B4	B3	B2	B1	B0	
00H	0	0	0	0	0	0	0	1	Use for ICC interface device only
					0	0	1	0	
					0	0	1	1	
	0	0	0	1	0	0	0	1	PPS(PTS) Application Ref) ISO7916-3
					0	0	1	0	
					0	0	1	1	
2 ~ FH				Reserved for future use					
01H~FFH	Reserved for future use								

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	29 OF 40	2006. 05. .

<High Nibble of 2'st Byte>

Code	Decryption
0000b	- Change the baud rate of IC Interface device. - Baud rate: Refer to following "Low Nibble of 2'st Byte" table.
00001	Value for the card to support PTS command . (Refer to ISO7816-3) - Change the baud rate of IC Interface device and IC card. - Baud rate: Refer to following "Low Nibble of 2'st Byte" table.

<Low Nibble of 2'st Byte>

Code	Decryption
0001b	9600bps
0010b	19200bps
0011b	38400bps

☞ Positive Response Format

SOH	Null	Length	STX	"C43"	GOOD	'1'	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Command Data Structure

Length_High	Length_Low	PPS DATA
2Byte		N Byte
		←————— Length —————→

P.S)

DATA Structure: The response value of the PPS request and length of the response value.

If 4Byte(PPSS, PPS0, PPS1, PCK) is the correct value, the executing is normal.

☞ Negative Response Format

SOH	Null	Length	STX	"C43"	E-Code	'0'	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	30 OF 40	2006. 05. .

3 MOVE

3.1 “C31” : It is to take a card from Stacker and to move it to Card Reader / Writer Module.

☞ Command Format

SOH	Null	Length	STX	“C31”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure

Stacker	Module
1Byte (Hex)	1Byte (Hex)

☞ Positive Response Format

SOH	Null	Length	STX	“C31”	GOOD	‘1’	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C31”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Data Variable

<Stacker>

Code	Setting	Detail
0x01	Stacker 1	Select Stacker 1
0x02	Stacker 2	Select Stacker 2
0x03	Auto	Select Stacker automatically

<Module>

Code	Setting	Detail
0x01	MSRW	Card transport to MSRW Module
0x02	IC	Card transport to IC Module
0x03	RF	Card transport to RF Module

3.2 “C32” : It is take card to Card Reader / Writer Module

☞ Command Format

SOH	Null	Length	STX	“C32”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

☞ Command Data Structure

Module
1Byte (Hex)

☞ Positive Response Format

SOH	Null	Length	STX	“C32”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C32”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Data Variable

<Module>

Code	Setting	Detail
0x01	MSRW	Card transport to MSRW Module
0x02	IC	Card transport to IC Module
0x03	RF	Card transport to RF Module

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	31 OF 40	2006. 05. .

3.3 “C34” : It takes card to Bin Box (Capture)

☞ Command Format

SOH	Null	Length	STX	“C34”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C34”	GOOD	‘1’	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C34”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Details

Capture card is stored in Bin Box in the back of CIM-6X0. If the Box is full, it causes an error.

3.4 “C36” : Dispense the card to front and Drop it out of the unit.

☞ Command Format

SOH	Null	Length	STX	“C36”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C36”	GOOD	‘1’	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C36”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

☞ Note

The CIM-6xxx model with bezel or shutter can not use “C36” command.

3.5 “C37” : Dispense the card to front and hold it at the exit roller of the unit.

☞ Command Format

SOH	Null	Length	STX	“C37”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

☞ Positive Response Format

SOH	Null	Length	STX	“C37”	GOOD	‘1’	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----	-----

☞ Negative Response Format

SOH	Null	Length	STX	“C37”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	32 OF 40	2006. 05. .

◆ **IC CARD**

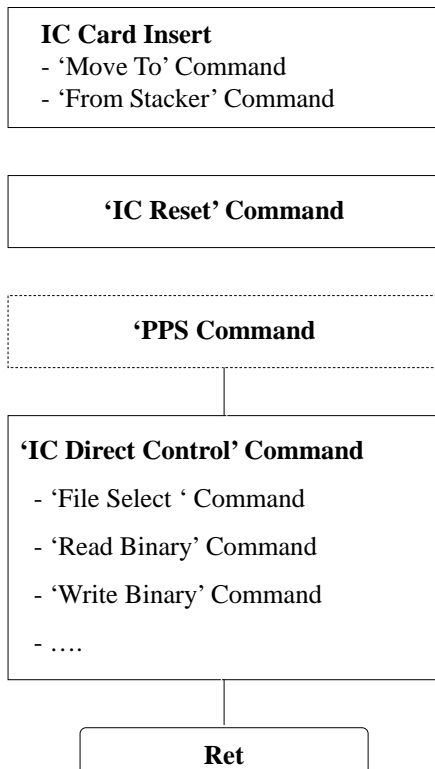
This section describes the commands that can use at the IC card and Memory card.

The IC card should conform to the ISO7816-4 T=0 and T=1 , these cards is available

The applicable models in the CIM6000 Series are the CIM620, CIM640, CIM650, CIM670, and the available commands are as follows.

Item	Cm0	Cm1	Cm2	Detail	Note
IC CONTROL	'T'	'2'	'1'	IC Card Reset	
	'T'	'2'	'2'	IC Card Direct Control	
	'C'	'4'	'3'	Ref) Section 2.6.1	

Select the card Protocol or Speed & IC module baud rate



Option :.you can select use or not use according to necessity
Ref) Section 2.6.1(page 27)

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	33 OF 40	2006. 05. .

1 IC CONTROL

1.1 “I21” : Reset the IC card and receive the ATR from card.

Command Format

SOH	Null	Length	STX	“I21”	ETX	Bcc
-----	------	--------	-----	-------	-----	-----

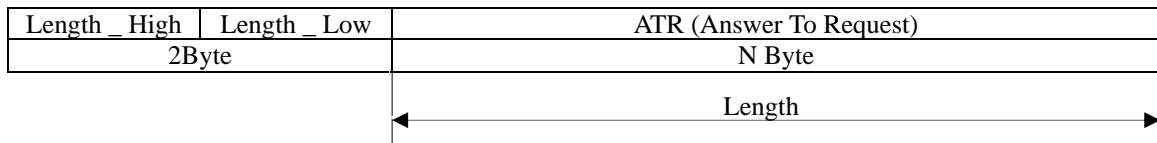
Positive Response Format

SOH	Null	Length	STX	“I21”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

Negative Response Format

SOH	Null	Length	STX	“I21”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

Response Data Structure



Example

SAMSUNG SCOS ATR

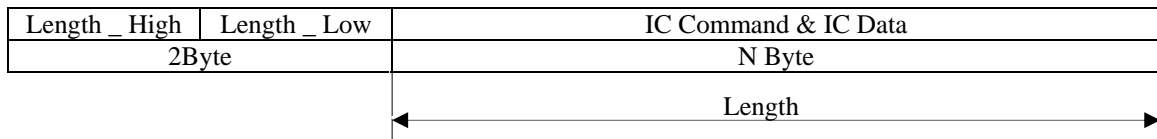
High 8Byte	0x3B	0x6B	0x00	0x00	0x80	0x31	0x80	0x63
Low 7Byte	0x53	0x46	0x01	0x83	0x03	0x90	0x00	

1.2 “I22” : Control the card conforming to the ISO 7816 T = 0 and T =1 , ISO 7816 – 4 standard directly.

Command Format

SOH	Null	Length	STX	“I22”	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	-----

Command Data Structure



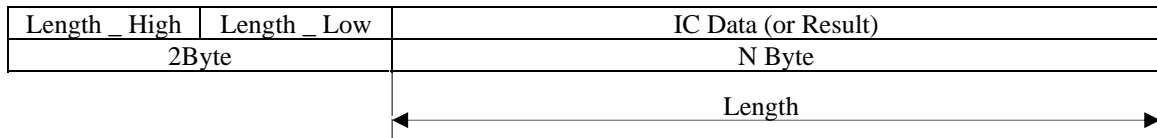
Positive Response Format

SOH	Null	Length	STX	“I22”	GOOD	‘1’	DATA	ETX	Bcc
-----	------	--------	-----	-------	------	-----	------	-----	-----

Negative Response Format

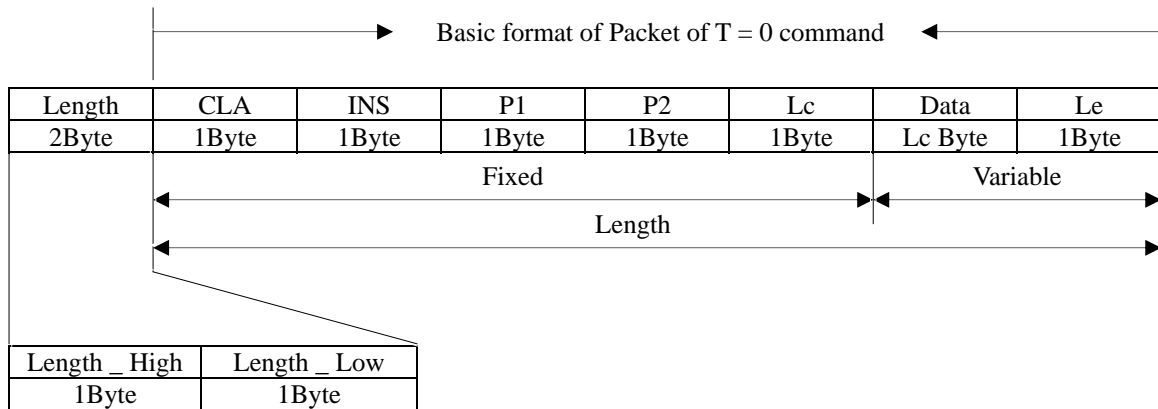
SOH	Null	Length	STX	“I22”	E-Code	‘0’	ETX	Bcc
-----	------	--------	-----	-------	--------	-----	-----	-----

Response Data Structure



Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	34 OF 40	2006. 05. .

IC Command & IC Data Structure



CLA	Class	Note
INS	Instruction	
P1	Offset(High Value)	
P2	Offset(Low Value)	
Lc	A number of data to transfer	Max Value : 255
Data	Data to Transfer	
Le	A number of data to receive	

Format of T = 0 Command

Command	INS Code (Hex Value)
Read Binary Command	B0
Write Binary Command	D0
Update Binary Command	D6
Erase Binary Command	0E
Read Record(s) Command	B2
Write Record Command	D2
Append Record Command	E2
Update Record Command	DC
Get Data Command	CA
Put Data Command	DA
Select File Command	A4
Verify Command	20
Internal Authenticate Command	88
External Authenticate Command	82
Get Challenge Command	84
Manage Channel Command	70

For more information, refer to the ISO 7816 – 4 standard.

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	35 OF 40	2006. 05. .

ERROR DETAIL

<GOOD>

Code : 0x0000
Description: Normal Execution
Procedures: None

<NOT_DEFINE_COMMAND>

Code : 0x2001
Description : Using the command that does not defined in this model.
Action : Use the valid command in this model.

<NOT_USE_COMMAND>

Code : 0x2002
Description : Not available command in this model.
Action : Use the valid command in this model.

<COMM_FRAME_ERROR>

Code : 0x2003
Description : Sending the command that has the invalid communication frame.
Action : Check the data format and the corresponding module specification.

<CARD_JAM>

Code : 0x2004
Description : When the card is jammed.
Action : Remove the jammed card.

<NO_CARD>

Code : 0x2005
Description : No cards.
Action : Insert the card.

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	36 OF 40	2006. 05. .

<CARD_PRESENT>

Code : 0x2006

Description : When the card exists already in the terminal.

Action : Eject the card.

<BUSY>

Code : 0x2007

Description : When the terminal is running or busy.

Action : Wait until the previous operation is completed.

<DISPENSER_ERROR>

Code : 0x2100

Description : Not Applicable Dispenser.

Action : Reset the terminal and exchange the dispenser..

<DISPENSER_COMM_ERROR>

Code : 0x2101

Description : Dispenser communication error

Action : Check the communication line and reset the terminal.

<STACKER1_ERROR>

Code : 0x2102

Description : The first STACKER ERROR

Action : Be sure that the card is loaded at the first stacker.

<STACKER2_ERROR>

Code : 0x2103

Description: The second STACKER ERROR

Action : Be sure that the card is loaded at the second stacker.

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	37 OF 40	2006. 05. .

<ALL_EMPTY>

Code : 0x2104

Description : No cards at both the first and second stacker.

Action : Load the card in the stacker.

<STACKER1_EMPTY>

Code : 0x2105

Description : No card at the first stacker.

Action : Load the card at the first stacker.

<STACKER2_EMPTY>

Code : 0x2106

Description : No card at the second stacker.

Action : Load the card at the second stacker.

<STACKER1_WARNING>

Code : 0x2107

Description : Too few cards in the first stacker.

Action : Load the card at the first stacker.

<STACKER2_WARNING>

Code : 0x2108

Description : Too few cards in the second stacker.

Action : Load the card at the second stacker.

<ERROR_BIN_FULL>

Code : 0x2109

Description : Too many cards in the 'CAPTURE BOX'.

Action : Keep the capture box empty.

<MSRW_ERROR>

Code : 0x2200

Description : The MS Reader/Writer that cannot use in this model.

Action : Change the MS Reader/Writer.

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	38 OF 40	2006. 05. .

<MSRW_COMM_ERROR>

Code : 0x2201

Description : The MS Reader/Writer communication error.

Action : Check the communication line and reset the terminal.

<MSRW_WRITE_ERROR>

Code : 0x2202

Description : Error when the MS Reader/Writer is writing on the card.

Action : Clean the header and check the card.

<MSRW_READ_ERROR>

Code : 0x2203

Description : Error when the MS Reader/Writer is reading on the card.

Action : Clean the header and check the card.

<IC_CONTACT_ERROR>

Code : 0x2204

Description : Error while the terminal contacts the IC card.

Action : Be sure that the current card is an IC card.

<IC_CONTROL_ERROR>

Code : 0x2205

Description : Error while the terminal executes the IC card command.

Action : Check if the command is able to use in the contacted card.

<RF_ERROR>

Code : 0x2300

Description : Unavailable RF module.

Action : Change the RF MODULE

<RF_COMM_ERROR>

Code : 0x2301

Description : Communication error at the RF Module.

Action : Check the connection socket

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
		X1	39 OF 40	2006. 05. .

<RF_AUTHEN_ERROR>

Code : 0x2302

Description : Authentication Error at the RF Module.

Action : Change the 'SECRET KEY'

<RF_WRITE_ERROR>

Code : 0x2303

Description : Error while the terminal writes at the RF Card.

Action : Be sure that the card exists in the detection range.

<RF_READ_ERROR>

Code : 0x2304

Description : Error while the terminal reads at the RF Card.

Action: Be sure that the card exists in the detection range.

<RF_DETECT_ERROR>

Error Code : 0x2305

Description : No RF Card.

Action : Insert the RF Card into the terminal.

<RF_AMOUNT_ERROR>

Error Code : 0x2306

Description : RF Card

Doc No	CIM65XX SPECIFICATION	REV	PAGE	DATE
			X1	40 OF 40

Precautions

1. Check if the card exists in stacker. Otherwise, it may not issue the card.

2. Check the communication line

- 1) Communication Port, Baud, Parity, and Data Bit, etc.
- 2) The COM2 port is not available just now.

3. Check the 'CAPTURE BOX'.

The 'BIN FULL' error might be caused, if you turn on the power in condition that the card exists in the 'CAPTURE BOX' behind the terminal.